



# Local Drought Update

July 29, 2021

10:56 AM

Minor changes in parts of eastern Nebraska

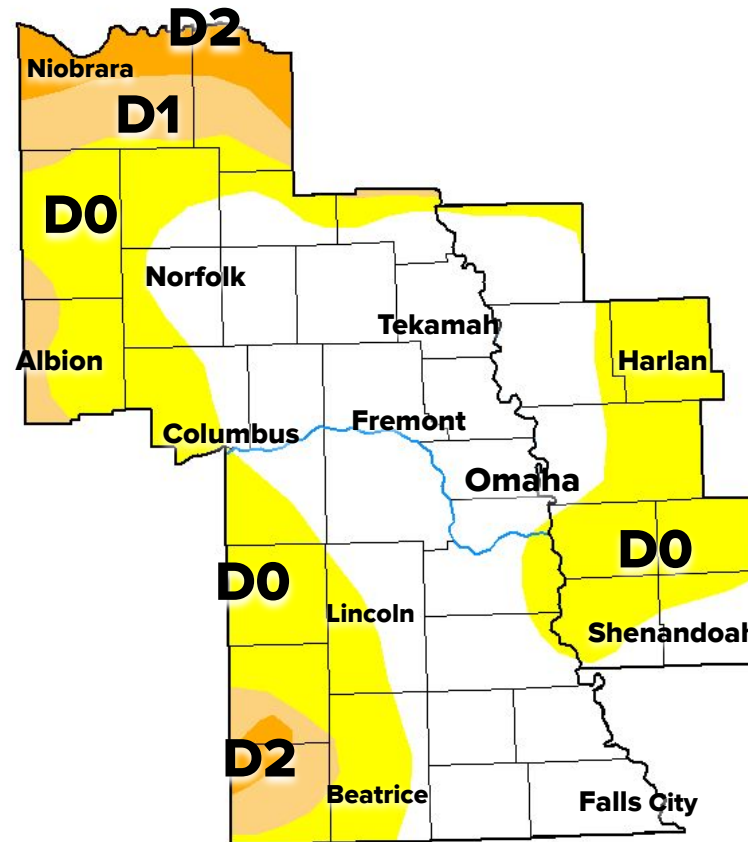
## Key Messages

- D2 (Severe Drought) - Has been expanded across parts of Cedar County and introduced into parts of Jefferson and Saline Counties.
- Improvements - A one category improvement was implemented over extreme southern Gage and Jefferson Counties.
- Degradation - The southern fringes of the D0 (Abnormally Dry) category in northeastern Nebraska were slightly expanded south. They also expanded west across the Missouri River out of southwest Iowa.

## Next Scheduled Briefing

- The US Drought Monitor is updated and released each Thursday morning. This packet will be next be updated on August 19th or perhaps sooner with the re-introduction of D3 category of drought.

## U.S. Drought Monitor Omaha/Valley, NE WFO



July 27, 2021

(Released Thursday, Jul. 29, 2021)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	50.76	49.24	12.53	4.42	0.00	0.00
Last Week 07-20-2021	57.09	42.91	13.43	3.29	0.00	0.00
3 Months Ago 04-27-2021	83.05	16.95	0.58	0.00	0.00	0.00
Start of Calendar Year 12-29-2020	0.00	100.00	99.37	21.65	0.00	0.00
Start of Water Year 09-29-2020	3.59	96.41	81.80	29.74	2.05	0.00
One Year Ago 07-28-2020	42.68	57.32	42.85	1.87	0.00	0.00

### Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

### Author:

Brad Rippey  
U.S. Department of Agriculture



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)



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OCEANIC AND ATMOSPHERIC ADMINISTRATION

Omaha, Nebraska

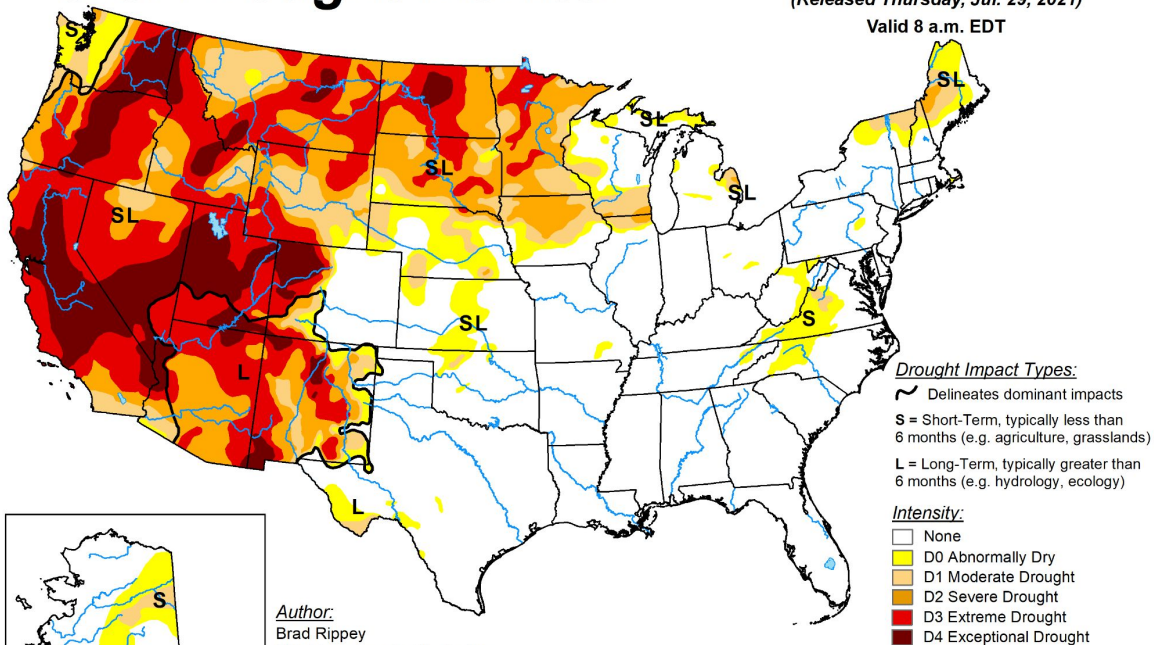


# Change in Drought Status

July 29, 2021  
10:56 AM

## U.S. Drought Monitor

July 27, 2021  
(Released Thursday, Jul. 29, 2021)  
Valid 8 a.m. EDT



Author:  
Brad Rippey  
U.S. Department of Agriculture

### Drought Impact Types:

- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

### Intensity:

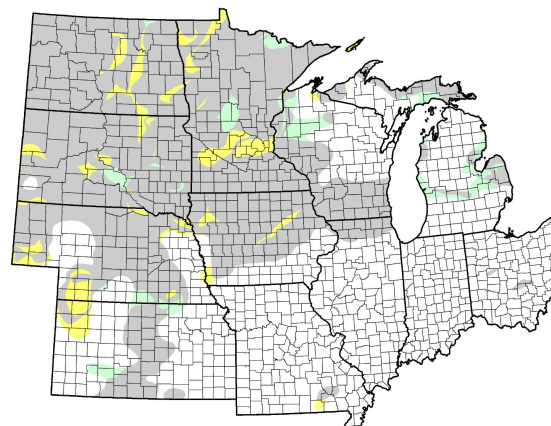
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions.  
Local conditions may vary. For more information on the  
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[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

### U.S. Drought Monitor Class Change - North Central States 1 Week

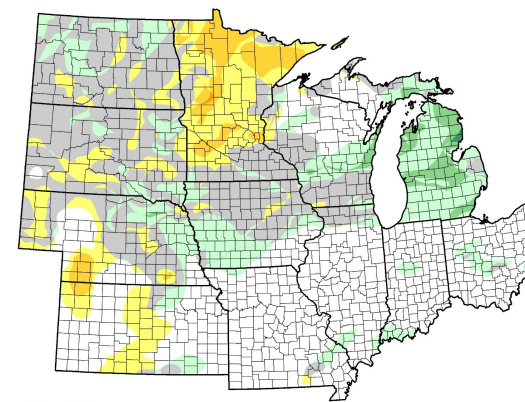


July 27, 2021  
compared to  
July 20, 2021

[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

## 1 Week Change

### U.S. Drought Monitor Class Change - North Central States 4 Week



July 27, 2021  
compared to  
June 29, 2021

[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

## 4 Weeks Change

Interactive Drought Monitor: [droughtmonitor.unl.edu/CurrentMap.aspx](https://droughtmonitor.unl.edu/CurrentMap.aspx)

Drought Change Maps: [droughtmonitor.unl.edu/Maps/ChangeMaps.aspx](https://droughtmonitor.unl.edu/Maps/ChangeMaps.aspx)



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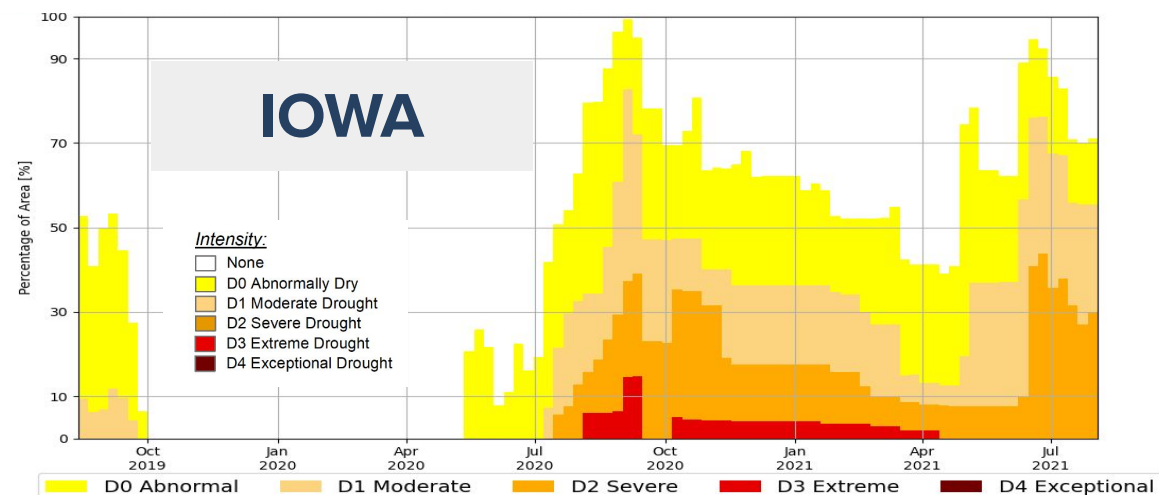
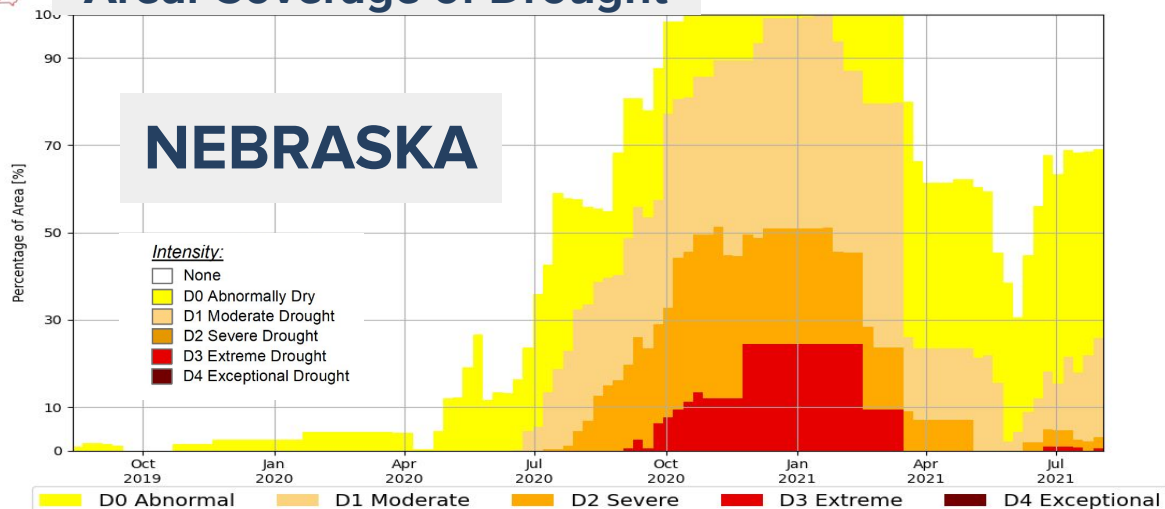


# Change in Drought Status

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## Areal Coverage of Drought



## Drought Impacts

- Fairbury, NE asked residents to limit water usage.
- Storm Lake, IA approved new water conservation measures.
- Norfolk, NE updated their sprinkler ordinance in late July in case of worsening drought conditions.
- In June, Harlan, IA implemented a “tier 1” water watch for a depleted water supply.
- Army Corps of Engineers implemented drought conservation measures on the Missouri River in July.

Drought Timeline: [mesonet.agron.iastate.edu/plotting/auto/?q=183](https://mesonet.agron.iastate.edu/plotting/auto/?q=183)

Generated at 29 Jul 2021 8:22 AM CDT in 1.68s

IEM Autoplot App #183



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Omaha, Nebraska





# Drought Category Definitions

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<b>D0</b>	<b>Abnormally Dry</b>	<b><u>Going into drought:</u></b> <ul style="list-style-type: none"><li>• Short-term dryness slowing planting, growth of crops or pastures</li></ul>	<b><u>Coming out of drought:</u></b> <ul style="list-style-type: none"><li>• Some lingering water deficits</li><li>• Pastures or crops not fully recovered</li></ul>
<b>D1</b>	<b>Moderate Drought</b>	<ul style="list-style-type: none"><li>• Some damage to crops, pastures</li><li>• Streams, reservoirs, or wells low, some water shortages developing or imminent</li><li>• Voluntary water-use restrictions requested</li></ul>	
<b>D2</b>	<b>Severe Drought</b>	<ul style="list-style-type: none"><li>• Crop or pasture losses likely</li><li>• Water shortages common</li><li>• Water restrictions imposed</li></ul>	
<b>D3</b>	<b>Extreme Drought</b>	<ul style="list-style-type: none"><li>• Major crop/pasture losses</li><li>• Widespread water shortages or restrictions</li></ul>	
<b>D4</b>	<b>Exceptional Drought</b>	<ul style="list-style-type: none"><li>• Exceptional and widespread crop/pasture losses</li><li>• Shortages of water in reservoirs, streams, and wells creating water emergencies</li></ul>	





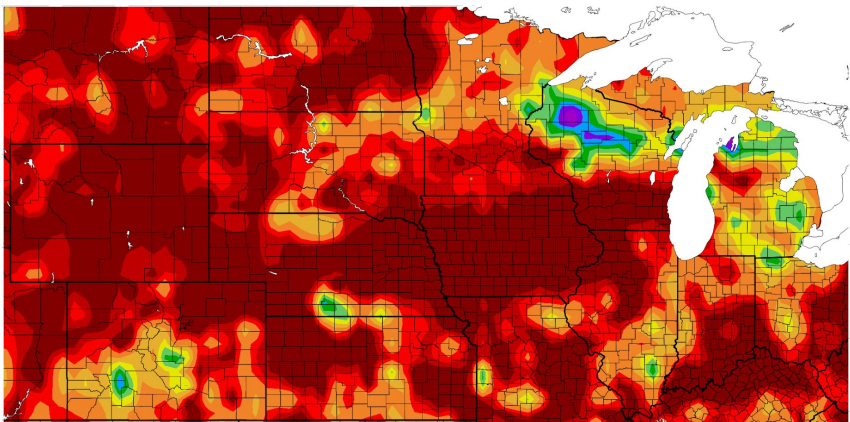


# Historical Precipitation Totals

July 29, 2021  
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## Previous 7 Day Precipitation Totals

7/21/2021 – 7/27/2021



## Highlights

→ Very dry conditions persisted across the area. Most locations saw no rain this week. Every city listed lost ground for YTD moisture.

## Data As Of: July 28, 2021

Location	YTD Precipitation	YTD Departure	July to Date Departure
Norfolk, NE	16.84"	+0.09"	-0.30"
Omaha, NE	18.00"	-1.07"	-0.95"
Lincoln, NE	17.32"	-0.99"	-2.04"
Tekamah, NE	20.76"	+3.55"	+1.06"
Falls City, NE	22.17"	+0.56"	-2.50"
Clarinda, IA	19.70"	-3.20"	-1.13"
Albion, NE	16.42"	-0.25"	-1.88"
Beatrice, NE	16.81"	-2.84"	-1.29"
Columbus, NE	17.64"	-0.57"	-1.24"
Fremont, NE	22.23"	+3.44"	+2.72"



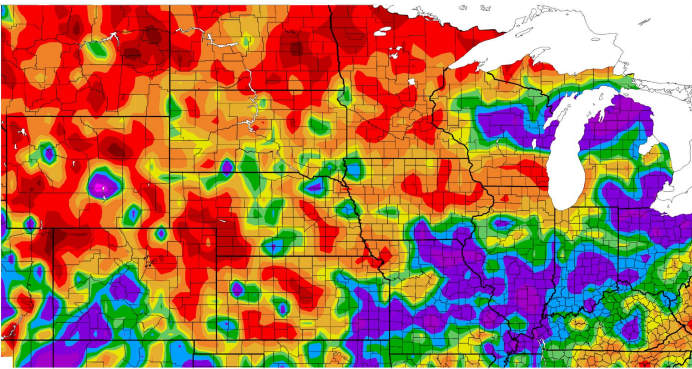
# Historical Precipitation Totals

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## Longer Range Precip - Percent of Normal

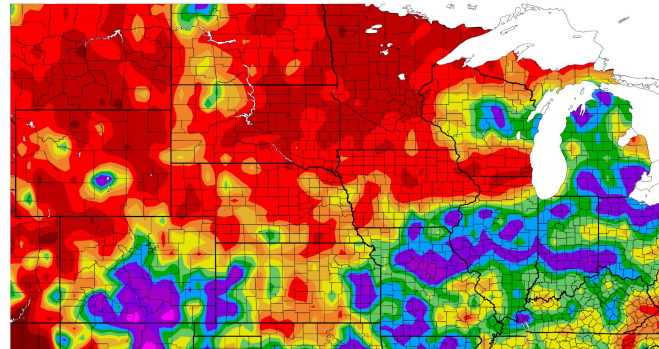
### 30 Day Percent of Normal

6/28/2021 - 7/27/2021



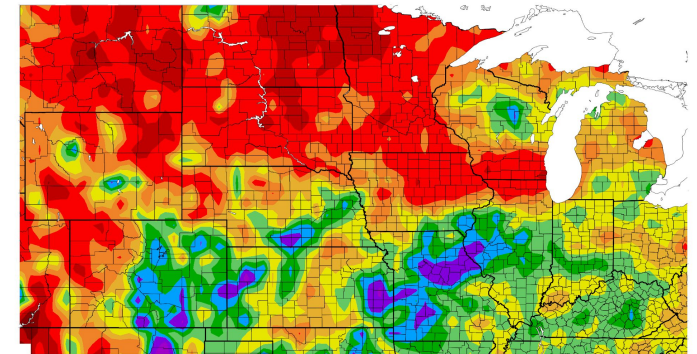
### 90 Day Percent of Normal

4/29/2021 - 7/27/2021



### YTD Percent of Normal

1/1/2021 - 7/27/2021



## Highlights

- Generally, eastern Nebraska has fared better than western Iowa for 2021.
- May, June and July have produced less thunderstorms and subsequent moisture for most of the area.

To Reproduce These Maps and For More Information,  
Visit the High Plains Regional Climate Center at:  
[hprcc.unl.edu/maps.php?map=ACISClimateMaps](https://hprcc.unl.edu/maps.php?map=ACISClimateMaps)



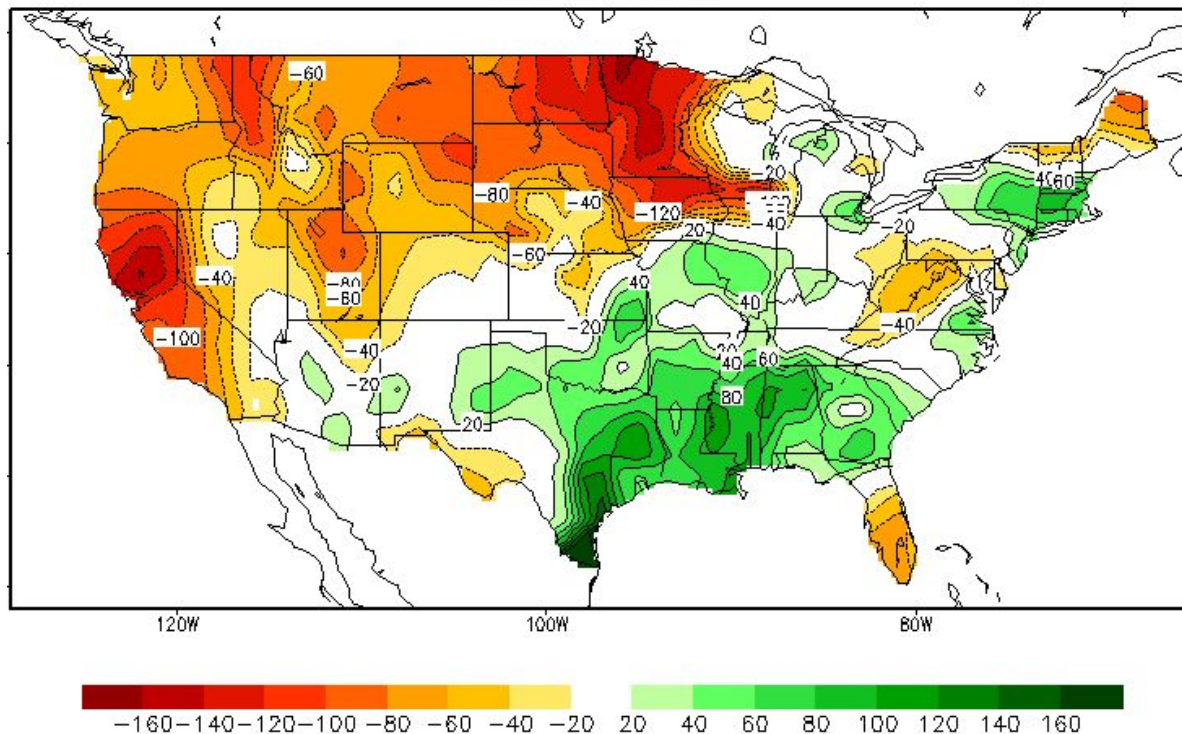




# Current Soil Moisture Status

July 29, 2021  
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Calculated Soil Moisture Anomaly (mm)  
JUL 27, 2021



## Nebraska (Entire State)

As of July 26	Very Short Moisture	Short Moisture	Adequate Moisture	Moisture Surplus
<b>Topsoil</b>	<b>9%</b>	<b>37%</b>	<b>53%</b>	<b>1%</b>
<b>Subsoil</b>	<b>9%</b>	<b>40%</b>	<b>50%</b>	<b>1%</b>

## SW Iowa

As of July 25	Very Short Moisture	Short Moisture	Adequate Moisture	Moisture Surplus
<b>Topsoil</b>	<b>0%</b>	<b>23%</b>	<b>73%</b>	<b>4%</b>
<b>Subsoil</b>	<b>7%</b>	<b>35%</b>	<b>57%</b>	<b>1%</b>

## Additional Impacts

- Districts in northwest Iowa are in a much worse predicament. They reported subsoil moisture conditions as 84% short to very short as of 7/25/21.



# Summary of Drought Impacts

July 29, 2021  
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## Agricultural Impacts

### Crops Rated Poor or Very Poor

<b>Nebraska</b> (Entire State) as of July 26, 2021		<b>Iowa</b> (Entire State) as of July 26, 2021	
Corn	6%	Corn	7%
Sorghum	3%	Hay (all)	9%
Oats	9%	Oats	5%
Pasture/Range	16%	Pasture/Range	19%
Soybeans	3%	Soybeans	8%

## Agricultural Impacts

- Unseasonable dryness and heat was recorded across both states this week.
- High temps and humidity are impacting livestock and some producers are fighting pink-eye.
- Eighty-five percent of soybeans were blooming.

For additional information on agriculture impacts may be viewed from the:

- [USDA National Agricultural Statistics Service](#)
- [Iowa](#)
- [Nebraska](#)







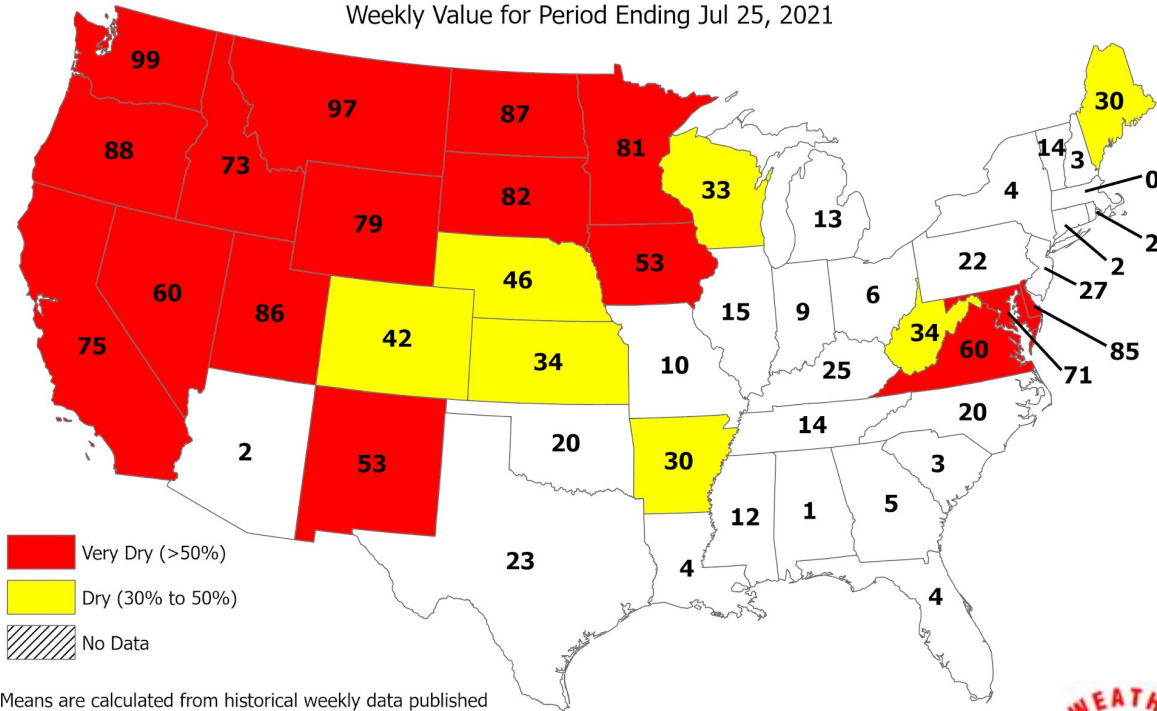
# USDA Topsoil Moisture Rankings

July 29, 2021  
10:56 AM

## USDA Topsoil Moisture by Short-Very Short

Percent of State Area

Weekly Value for Period Ending Jul 25, 2021



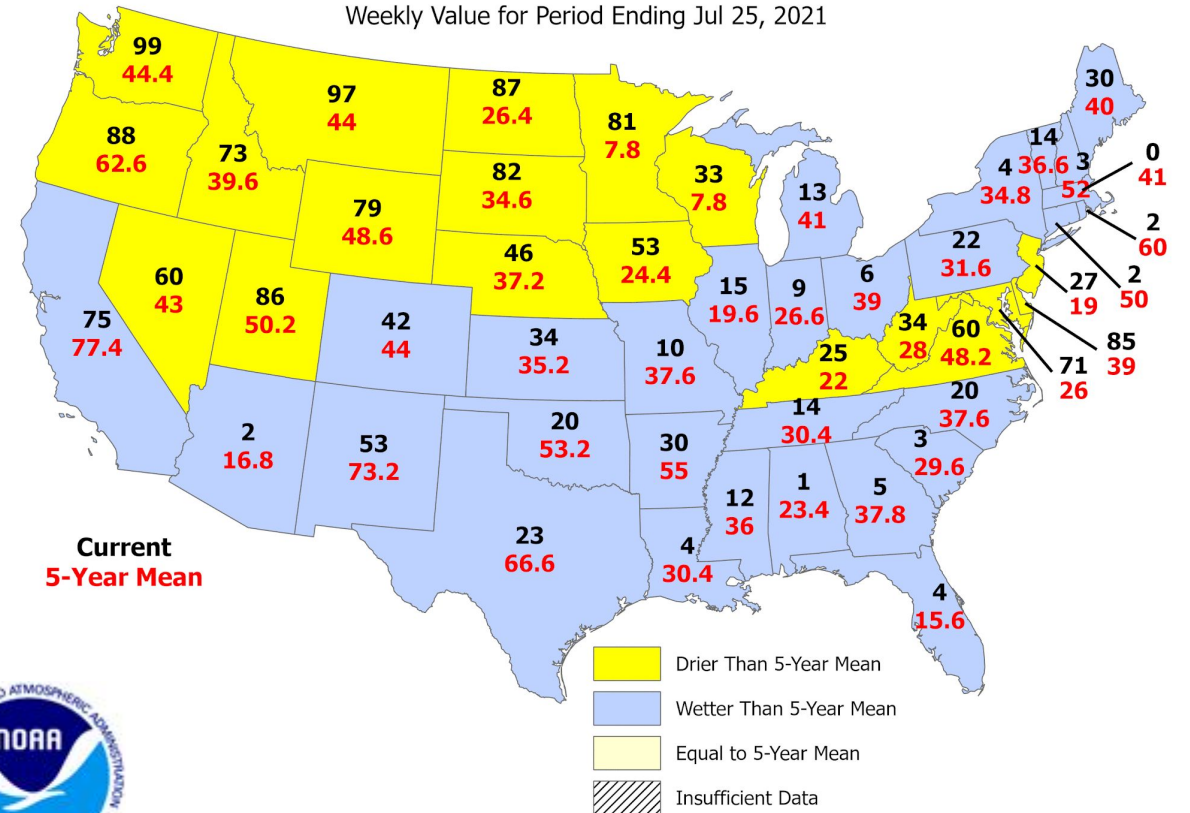
Means are calculated from historical weekly data published by USDA/NASS using the closest date to the equivalent date for this year.

Results are based on the short and very short percentages of topsoil moisture (upper 6 inches) reported by the USDA. Reports are based on subjective observations.

## USDA Topsoil Moisture by Short-Very Short

Current Vs. 5-Year Mean

Weekly Value for Period Ending Jul 25, 2021



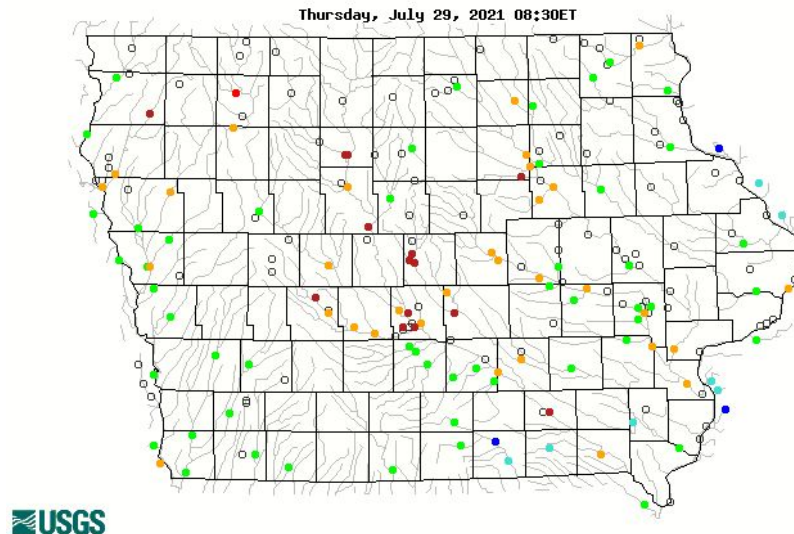
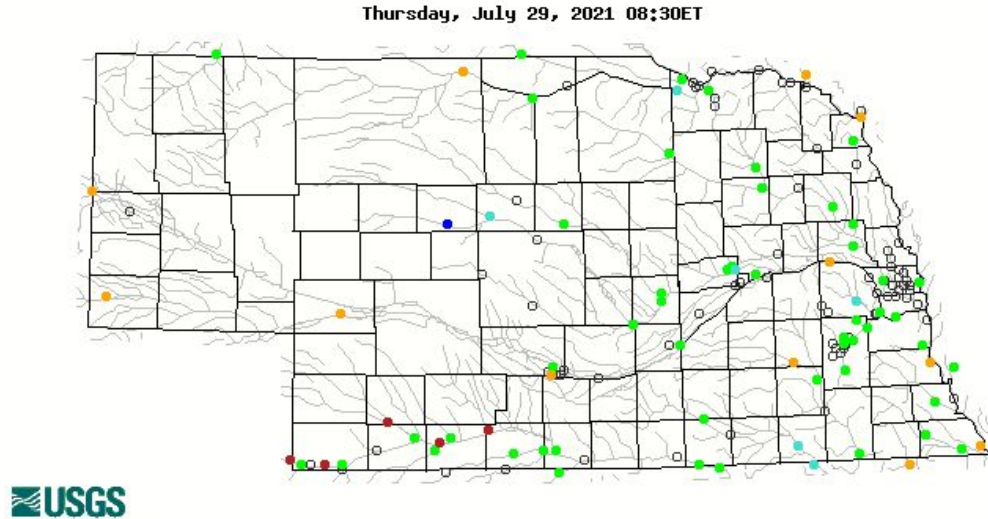


# Current Hydrology Conditions

July 29, 2021  
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## Map of Real-Time Streamflow Compared to Historical Streamflow for the Day

Percentile Classes		
	<b>Low</b>	
	<10	Much Below Normal
	10-24	Below Normal
	25-75	Normal
	76-90	Above Normal
	>90	Much Above Normal
	<b>High</b>	
	<b>Not Ranked</b>	



## Overview

- Streamflow remains generally close to or just above normal for most of Nebraska with the exception of much of the Republican River along the southern border where some gauges report streamflow as low as the 5th percentile.
- Much of eastern Nebraska and western Iowa is experiencing streamflows near normal, though this week brought some gages below normal.

## More Information

- Hourly and forecast river stages out to 90 days can be found at the National Weather Service's (NWS) Advanced Hydrologic Prediction Service (AHPS) web page: [water.weather.gov/ahps2/index.php?wfo=oax](https://water.weather.gov/ahps2/index.php?wfo=oax)
- Additional Current stream and river stages may be viewed at the following USGS Web Site: [waterwatch.usgs.gov](https://waterwatch.usgs.gov)





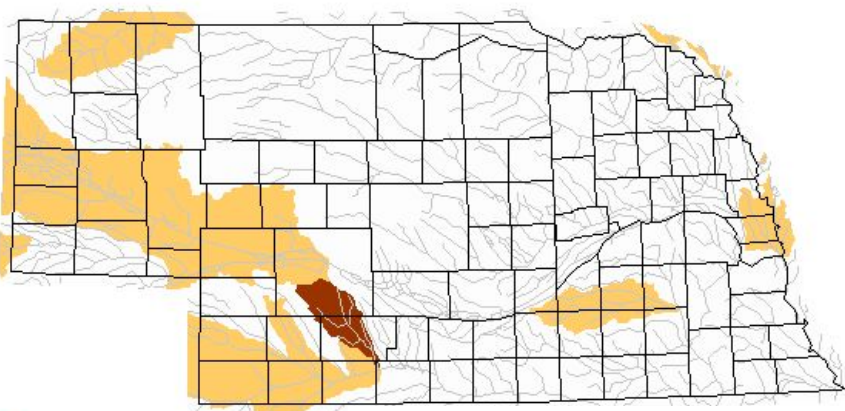


# Current Hydrology Conditions

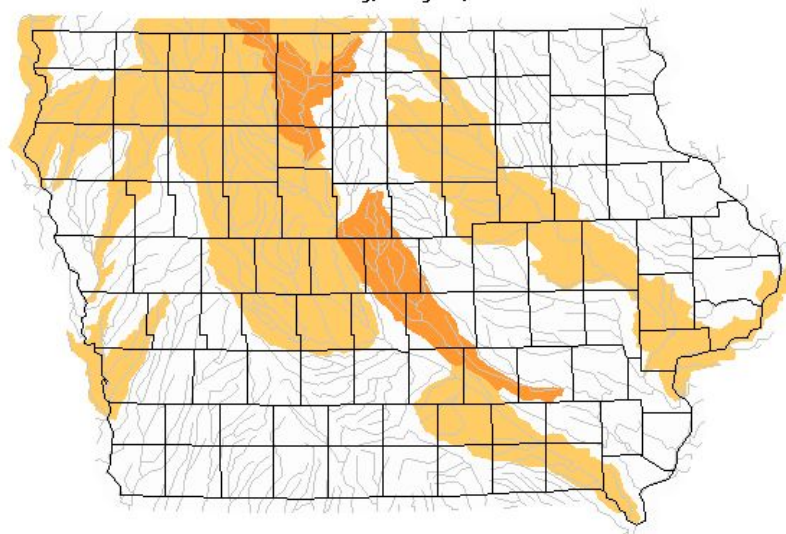
July 29, 2021  
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Map of Below Normal 7 Day Average Stream Flow Compared to Historical Streamflow for the Day





Wednesday, July 28, 2021



Wednesday, July 28, 2021



## Key: Percentile Classes

			
Low	$\leq 5$	6 - 9	10 - 24
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below Normal Stream Flow

## More Information

- Hourly and forecast river stages out to 90 days can be found at the National Weather Service's (NWS) Advanced Hydrologic Prediction Service (AHPS) web page:  
[water.weather.gov/ahps2/index.php?wfo=oax](https://water.weather.gov/ahps2/index.php?wfo=oax)
- Additional Current stream and river stages may be viewed at the following USGS Web Site:  
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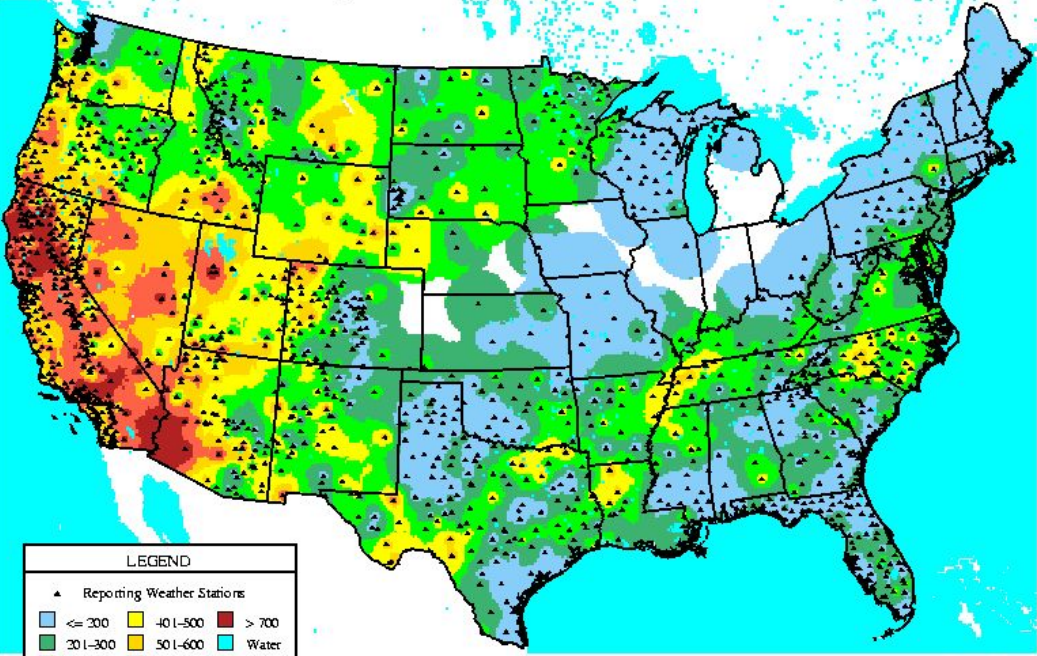


# Current Fire Weather Conditions

July 29, 2021  
10:56 AM

## Fire Danger Remains Highest Along SD State Line

Keetch-Byram Drought Index: 23-Jul-21



### Highlights

- Fire danger is now in the moderate category for much of northeastern Nebraska.

### Local Burn Bans:

- Parts of Knox County NE, the area's driest location, have burn bans in place.

KBDI and Dead Fuel Moisture data can be found through the [Wildland Fire Assessment System \(WFAS\)](#)

Keetch-Byram Drought Index (KBDI)

KBDI Value	Description of Fire Potential
0 to 200	Low - Wet with little danger of fire initiation
201 to 400	Moderate - Drying occurring with some fire danger
401 to 600	High - Ground cover dry and will burn readily
601 to 800	Extreme - Dead and live fuels will burn readily



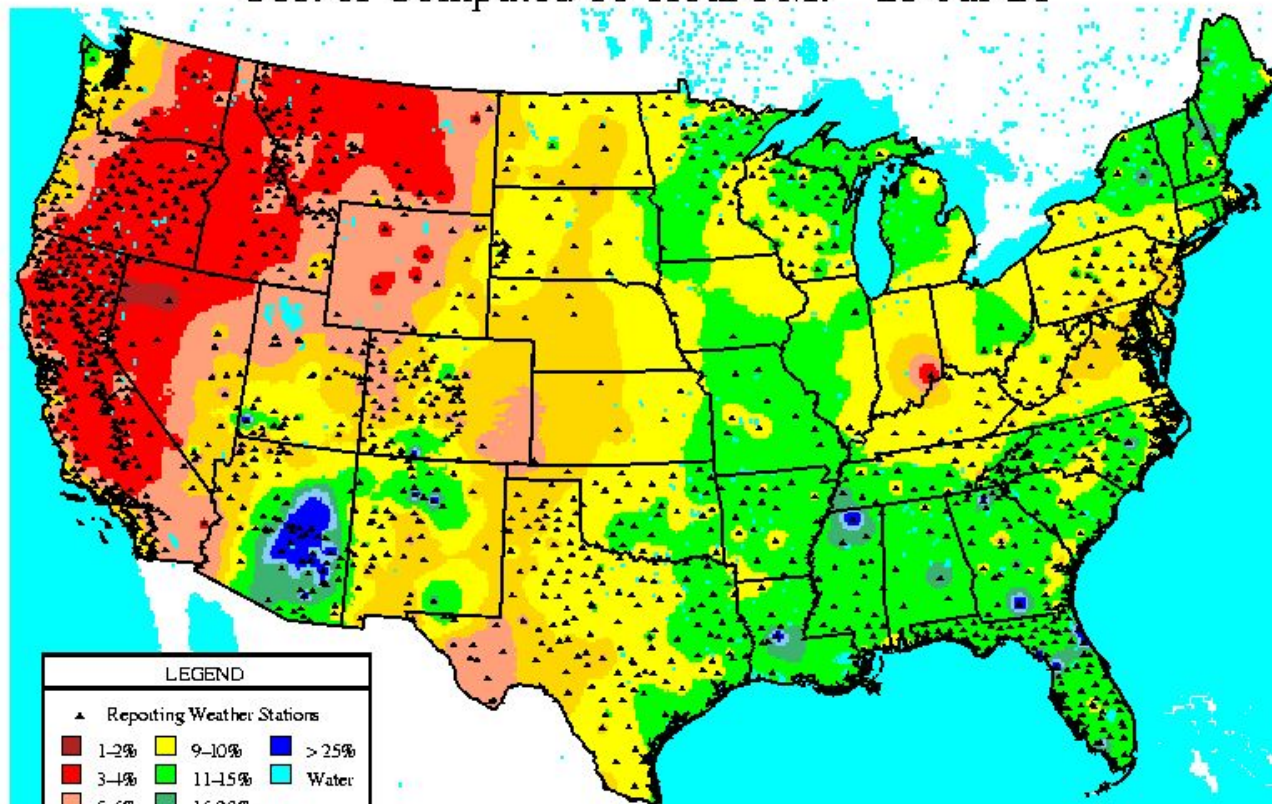


# Current Fire Weather Conditions

July 29, 2021  
10:56 AM

## 10 Hour Dead Fuel Moisture Values & Palmer Drought Severity Index

Obs. or Computed 10-Hour FM: 23-Jul-21

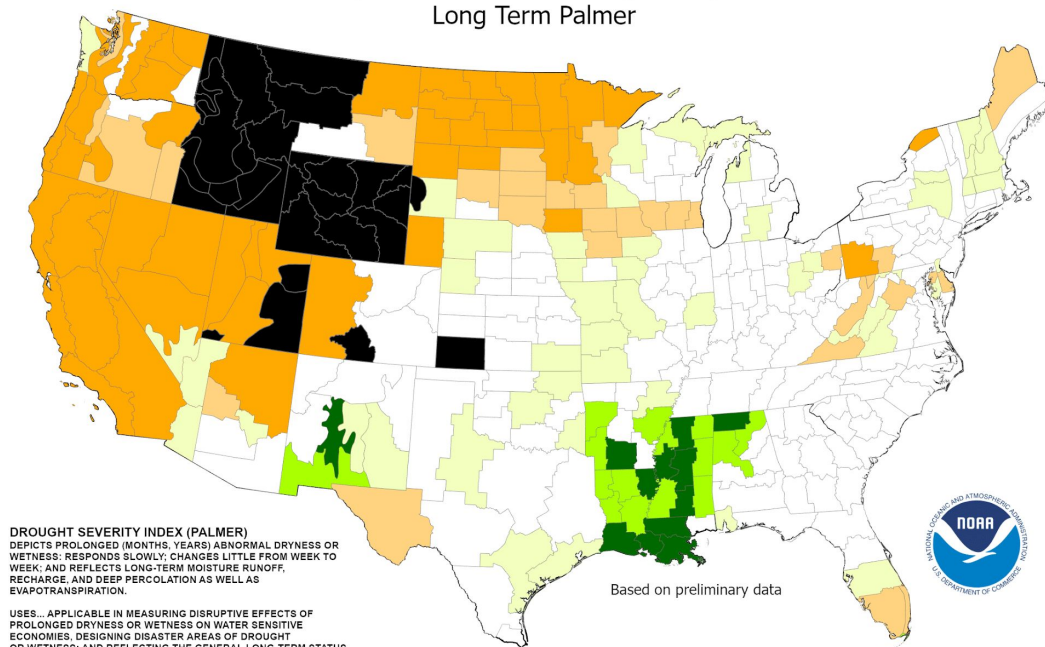


(Inv. Dist.<sup>2</sup> Interp.)

WFAS-MAPS Graphics FIRE BEHAVIOR RESEARCH MISSOULA, MT



Drought Severity Index by Division  
Weekly Value for Period Ending Jul 24, 2021  
Long Term Palmer



DROUGHT SEVERITY INDEX (PALMER)  
DEPICTS PROLONGED (MONTHS, YEARS) ABNORMAL DRYNESS OR WETNESS; RESPONDS SLOWLY; CHANGES LITTLE FROM WEEK TO WEEK; AND REFLECTS LONG-TERM MOISTURE RUNOFF, RECHARGE, AND DEEP PERCOLATION AS WELL AS EVAPOTRANSPIRATION.

USES... APPLICABLE IN MEASURING DISRUPTIVE EFFECTS OF PROLONGED DRYNESS OR WETNESS ON WATER SENSITIVE ECONOMIES, DESIGNING DISASTER AREAS OF DROUGHT OR WETNESS; AND REFLECTING THE GENERAL LONG-TERM STATUS OF WATER SUPPLIES IN AQUIFERS, RESERVOIRS AND STREAMS.

LIMITATIONS... IS NOT GENERALLY INDICATIVE OF SHORT-TERM (FEW WEEKS) STATUS OF DROUGHT OR WETNESS SUCH AS FREQUENTLY AFFECTS CROPS AND FIELD OPERATIONS (THIS IS INDICATED BY THE CROP MOISTURE INDEX).

Based on preliminary data



Legend for Drought Severity Index (Palmer):  
-4.0 or less (Extreme Drought)  
-3.0 to -3.9 (Severe Drought)  
-2.0 to -2.9 (Moderate Drought)  
-1.9 to +1.9 (Near Normal)  
+2.0 to +2.9 (Unusual Moist Spell)  
+3.0 to +3.9 (Very Moist Spell)  
+4.0 and above (Extremely Moist)  
Missing/Incomplete

Palmer Drought Severity Index and Dead Fuel Moisture data can be found through the: [Wildland Fire Assessment System \(WFAS\)](#)



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Omaha, Nebraska





# Upcoming Precipitation Potential

July 29, 2021

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For More Information Visit: [wpc.ncep.noaa.gov](https://wpc.ncep.noaa.gov)

## Highlights

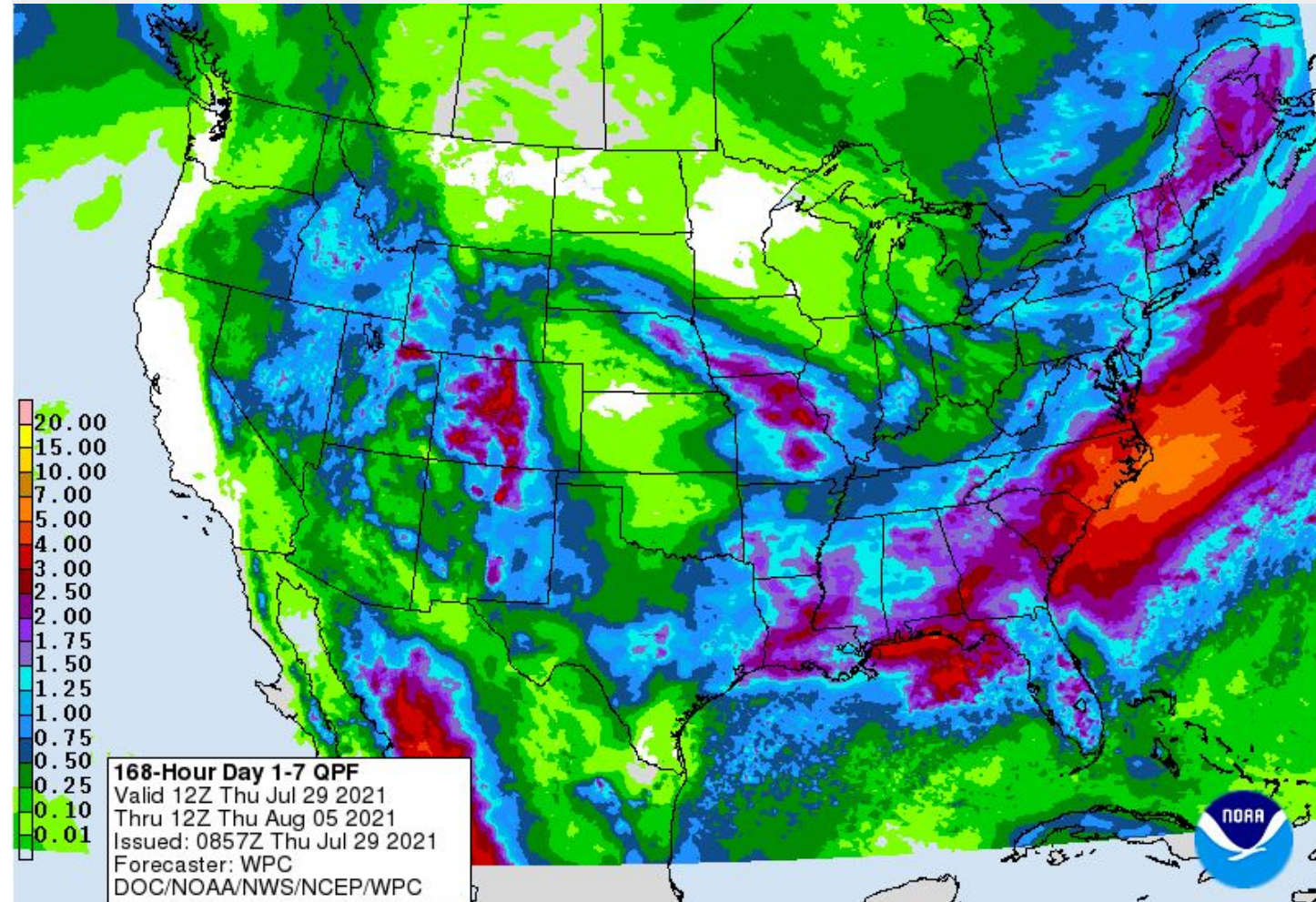
- Significant rain is possible over much of the area on Friday night.
- Greatest rainfall potential is along a stalled front that will stretch from O'Neil, NE to Omaha to Lamoni, IA.
- Normal rainfall for a week this time of year is around  $\frac{3}{4}$  of an inch.

## Confidence

### Precipitation Amounts



## Potential Precipitation Through Upcoming 7 Days





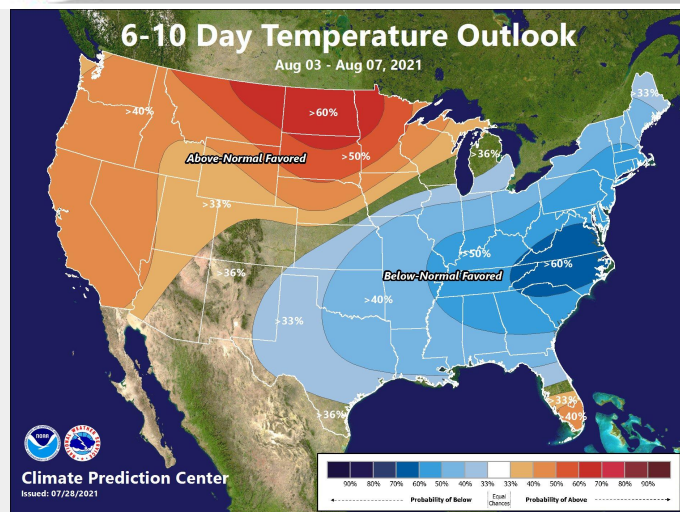


# Short Term Climate Outlook

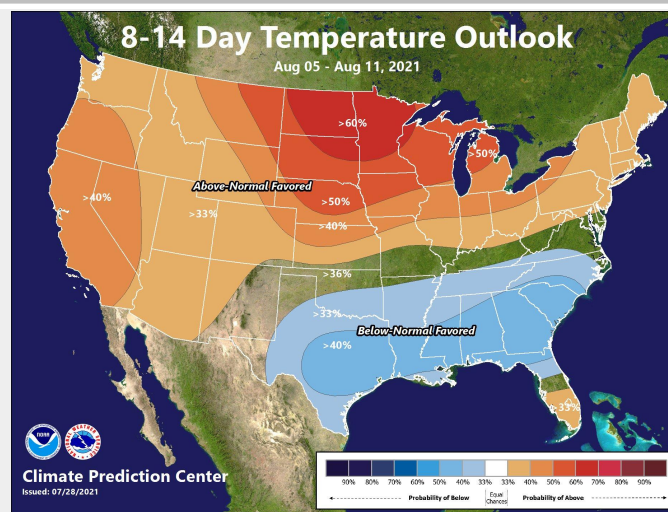
July 29, 2021  
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For More Information Visit: [cpc.ncep.noaa.gov](https://cpc.ncep.noaa.gov)

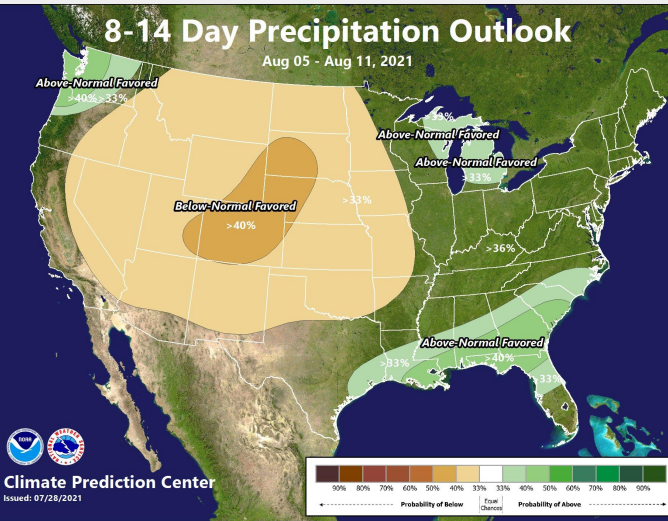
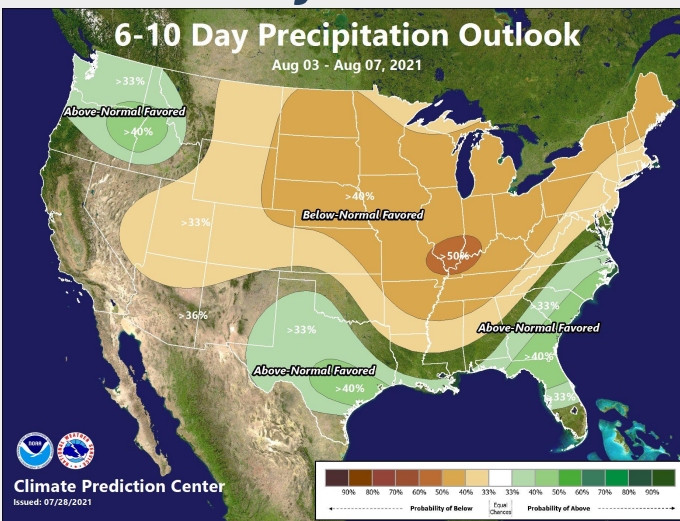
Temperature



Temperature



Precipitation



## Highlights

- Extreme temperatures take a break across the area this weekend and into next week.
- Temps will be climbing by \*next\* weekend..
- Significant rain of over an inch is possible across parts of the area on Friday, July 30th.







# Questions, Comments, and Resources

July 29, 2021  
10:56 AM

## Contact Information

If you have questions or comments about this information, please contact:

National Weather Service

**David Pearson** - Senior Service Hydrologist

**Taylor Nicolaisen** - Meteorologist, Drought Focal Point

**Van DeWald** - Lead Meteorologist, Drought Focal Point

**Phone:** (402) 359-5166

**Email:** [David.Pearson@noaa.gov](mailto:David.Pearson@noaa.gov)

[Taylor.Nicolaisen@noaa.gov](mailto:Taylor.Nicolaisen@noaa.gov)

[Van.DeWald@noaa.gov](mailto:Van.DeWald@noaa.gov)

## Acknowledgments:

The drought monitor is a multi-agency effort involving NOAA's National Weather Service and National Climatic Data Center, the USDA, state and regional center climatologists and the National Drought Mitigation Center. Information for this statement has been gathered from NWS and FAA observation sites, cooperative and volunteer observations, USDAFS, the USDA and USGS.

## Additional Resources

Additional information on current drought conditions may be found at the following web addresses:

**National Weather Service Omaha:** [weather.gov/Omaha](https://weather.gov/Omaha)

**Climate Prediction Center Drought:** [cpc.ncep.noaa.gov/products/Drought/](https://cpc.ncep.noaa.gov/products/Drought/)

**US Drought Monitor:** [droughtmonitor.unl.edu/](https://droughtmonitor.unl.edu/)

**National Drought Mitigation Center:** <https://drought.unl.edu/>

**National Water Dashboard:** [dashboard.waterdata.usgs.gov/app/nwd/?aoi=default](https://dashboard.waterdata.usgs.gov/app/nwd/?aoi=default)

**National Integrated Drought Information System:** [drought.gov](https://drought.gov)

**USGS Water Watch:** [waterwatch.usgs.gov](https://waterwatch.usgs.gov)

**US Army Corps of Engineers (USACE):** [usace.army.mil](https://usace.army.mil)

**High Plains Regional Climate Center (HRPCC):** [hprcc.unl.edu](https://hprcc.unl.edu)

**Iowa State Climatologist:** Justin Glisan, Ph.D. (515) 281-8981

[iowaagriculture.gov/climatology-bureau](https://iowaagriculture.gov/climatology-bureau)

**Nebraska State Climatologist:** Martha Shulski, Ph.D. (402) 472-6711

[nsco.unl.edu](https://nsco.unl.edu)

**USDA Crop Information:** [nass.usda.gov/index.asp](https://nass.usda.gov/index.asp)

**Drought Impact Reporter:** [droughtreporter.unl.edu/map](https://droughtreporter.unl.edu/map)

